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MOCKUP NUMBER 15, SPACECRAFT HANDLING AND
TRANSPORTATION SPECIFICATION
PROJECT APOLLO SPACECRAFT
(Unclassified)

NAS 9-150

28 February 1962

4.5.2.7



Approved by

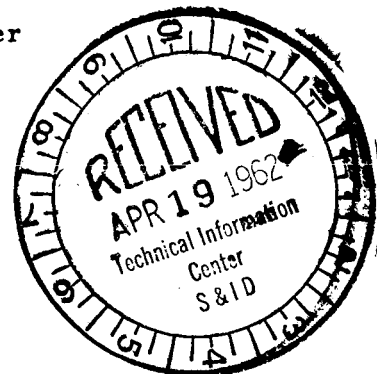
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1. SCOPE

1.1 Scope. - This specification covers a Spacecraft Handling and Transportation Mock-up, of the Project Apollo Spacecraft.

2. APPLICABLE DOCUMENTS

2.1 General. - The following documents form a part of this specification.

Government Documents

ARDCM-80-1,
Volume 1

Handbook of Instructions for Aircraft
Designers

3. REQUIREMENTS

3.1 Mock-Up Arrangement. - The mock-up arrangement shall be in accordance with Figure 1. The mock-up shall simulate, by inclusion of ballast if required, the following spacecraft characteristics:

- (a) External configuration
- (b) Mass configuration (with ballast)
- (c) Mechanical features affecting handling and transportation

3.1.1 Configuration. - The mock-up shall consist of the following simulated spacecraft systems and modules located approximately as shown in Figure 1:

- (a) Launch Escape System
- (b) Command Module
- (c) Service Module
- (d) Adapter

3.1.2 Additional Provisions. - The following additional provisions shall be simulated:

- (a) Hoisting and jacking provisions
- (b) Connections associated with handling and transportation equipment
- (c) Reaction control rockets, to be located on the exterior of the Command Module, if required
- (d) Connection and separation points

3.2 Construction. - The mock-up shall be required to handle ballast for weight and C. G. changes, and shall be constructed of materials and processes to provide an inexpensive mock-up of the spacecraft systems, modules, and attachment points listed in 3.1.1 and 3.1.2. Materials used shall have sufficient strength to support installations and withstand handling and transportation. Assemblies, parts, and components of the mock-up shall be rejected items of equipment, prototypes or reasonable facsimiles fabricated to the size and shape of the actual equipment. The basic configuration of the mock-up shall be as shown in Figure 1.

3.3 Performance. - The mock-up shall provide a means for evaluating characteristics involving the handling and transportation of the Spacecraft Launch Escape System, Command Module, Service Module, and Adapter and for incorporating new and proposed design changes to determine the feasibility of such changes. ARDCM-80-1, Volume 1, shall be used for guidance and reference material in the design of the mock-up. The mock-up shall accommodate ground handling equipment. The equipment and provisions listed in 3.1.1 and 3.1.2 may be either functional or simulated.

4. QUALITY ASSURANCE PROVISIONS (Not Applicable)

5. PREPARATION FOR DELIVERY

5.1 General. - The mock-up shall be used at the contractor's facility.

6. NOTES

6.1 Intended Use. - The mock-up is intended to aid in the design of Apollo Spacecraft Ground Support Equipment, as specified in SID 62-57.

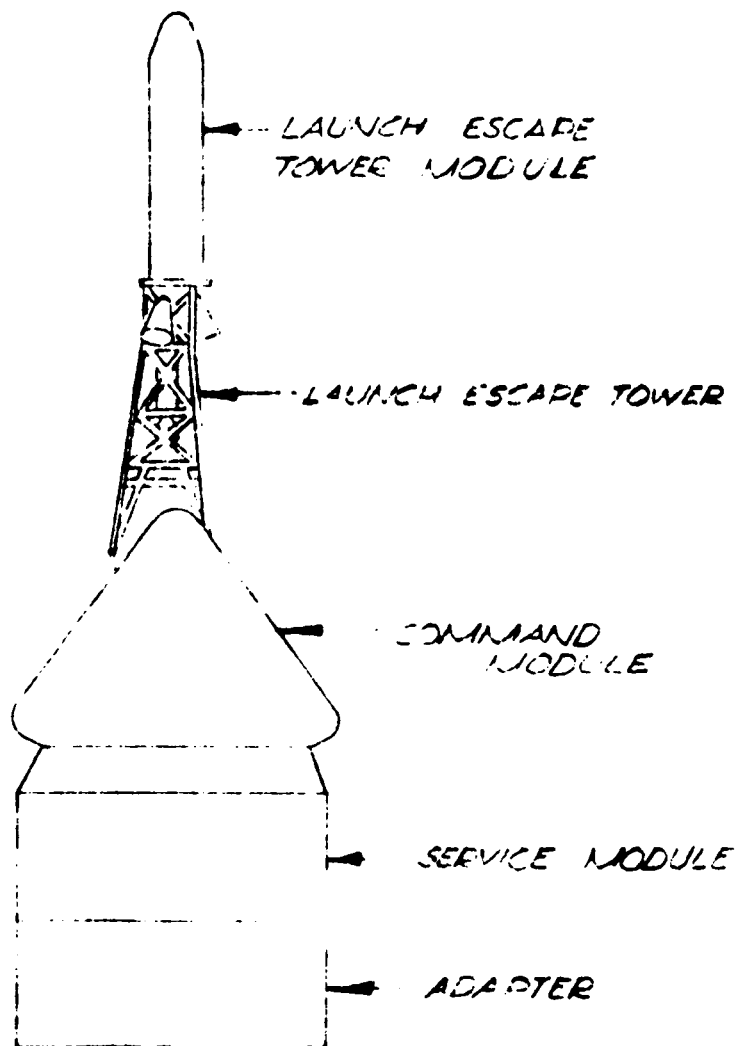


Figure 1. Overall Configuration

Appendix I-AContractor-Furnished Property, Contractor-Installed

<u>Item No.</u>	<u>Quantity</u>	<u>Description</u>	<u>Part No.</u>
1		Earth Landing System (location)	
2		Mechanical System	
		a. umbilicals	
		b. outer hatches & doors	
		c. windows & ports	
		d. hoisting & jacking connections	
3		Environmental Control System	
		a. snorkels	
4		Reaction Control System	
5		Launch Escape System	
6		Antenna System	
7		Instrumentation System	
		a. periscope	